

Case 3408

***Geophilus holstii* Pocock, 1895 (currently *Arrup holstii*; Chilopoda, MECISTOCEPHALIDAE): replacement of the holotype by designation of a neotype**

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Abstract. The purpose of this application, under Article 75.5 of the Code, is to replace the existing unidentifiable holotype of *Geophilus holstii* Pocock, 1895 (currently *Arrup holstii*) by a neotype. All body parts carrying useful diagnostic characters are missing in what remains of the holotype of *Geophilus holstii*. It is proposed to set the holotype aside and to designate a neotype.

Keywords. Nomenclature; taxonomy; Chilopoda, Geophilomorpha; MECISTOCEPHALIDAE; *Arrup*; *Arrup holstii*; centipede; Japan.

1. The nominal species *Geophilus holstii* was described by Pocock (1895, p. 352) based on a single, probably male, specimen from 'Ashinoju, Japan', collected by 'Mr. Holst'. This specimen represents the holotype of this taxon by monotypy (Article 73.1.2 of the Code). Pocock (1895) tentatively assigned the new species to *Geophilus* Leach, 1814 and discussed its possible inclusion in the genus *Mecistocephalus* Newport, 1843. As stated by Pocock (1895, p. 346), this specimen was preserved in the collections of the 'British Museum', where it was subsequently examined by Crabill (1964). It is still preserved at the Natural History Museum, London.

2. We examined the holotype of *Geophilus holstii* in 2006. The specimen, preserved in alcohol, has two labels: (1, printed) 'Prolamnonyx holstii Pocock / TYPE / JAPAN: Ashinojn? / BMNH #200456 / Chilo. 1891-.5.16.22'; (2, handwritten, except 'TYPE') 'TYPE / *Geophilus* / holstii Pocock / [=Prolamnonyx holstii (Poc.)] / N.B. When found among / ordinary material (6.IX.1962) / forebody and head + mouthparts / were missing. R. Crabill / 6.IX.1962'. In fact, only two pieces of the trunk are left in the vial, comprising 18 and 6 leg-bearing segments respectively. Conversely, the anterior part of the body (including the head and the forcipular segment), the posterior part of the body (including the last leg-bearing segment and the terminal segments) and many legs of the remaining parts of the trunk are missing. As far as is known, the missing parts are not present elsewhere in the collections of the Natural History Museum, London (J. Beccaloni, pers. comm.) and should be considered lost.

3. The type locality was consistently spelled as 'Ashinoju, Japan' in the original paper (Pocock, 1895); as mentioned, the variant spelling 'Ashinojn' occurs in a printed label associated with the holotype. No locality named 'Ashinoju' or

'Ashinojn' seems to be found in modern gazetteers, but the name may well correspond to Ashinoyu, a city in the Kanagawa Prefecture, central Honshu, Japan.

4. The validity of the species has been never disputed. Since the original description it has been cited in at least 40 papers, also in recent years. It has been recorded from a large area in Eastern Asia from Hokkaido to Taiwan, from Eastern China to Korea, and in some small nearby islands, though many reports are probably based on misidentifications (Uliana et al., 2007). Silvestri (1919, pp. 47, 85) designated *Geophilus holstii* as the type species of the new genus *Prolammonyx*, in the subfamily DICELLOPHILINAE (currently in the family MECISTOCEPHALIDAE). Crabill (1964, pp. 161–162), comparing the holotype of *Geophilus holstii* with specimens of *Arrup pylorus* Chamberlin, 1912, which is the type species of *Arrup* Chamberlin, 1912, recognised the genus *Prolammonyx* as a junior synonym of *Arrup*.

5. *Arrup* Chamberlin, 1912 is a well-defined genus, to which 16 nominal species are currently assigned; it is distributed from Central Asia to California, with the highest diversity in Eastern Asia (Bonato et al., 2003; Foddai et al., 2003; Uliana et al., 2007). The actual diversity of the genus is probably underestimated, especially in the area ranging from central Honshu (where the type locality of *G. holstii* is located) to Okinawa, where four new species have been recently discovered (Uliana et al., 2007). Most species included in the genus *Arrup* are highly uniform in morphology and their taxonomy and distinction are in some cases problematic. The most useful diagnostic characters are found in the head, in the forcipular segment and in the last leg-bearing segment (Uliana et al., 2007), which are exactly the body parts missing in what remains of the holotype of *Geophilus holstii*. Therefore, the present holotype is completely useless as a reference for the diagnosis of *Arrup holstii* and its distinction from the congeners. The original description of *Geophilus holstii* does not include many useful diagnostic characters and is therefore inadequate to separate unambiguously this taxon from other species in the genus *Arrup*. Limited additional information on the holotype was provided by Crabill (1964), who studied the specimen when it was still complete (evidently before 1962; see above). Silvestri (1919) redescribed the species as *Prolammonyx holstii*, from specimens from 'Kamamura', near Tokyo. The specific identity of this material is reasonably correct. Silvestri's description and illustrations provide detailed information on some additional morphological traits of the species, in particular on forcipules and mouthparts.

6. Thus, the taxonomical difficulties in the genus *Arrup*, and the wholly inadequate condition of the existing holotype of *Geophilus holstii*, require the designation of a neotype (Article 75.5 of the Code). We propose to designate as neotype a male specimen, 20 mm long, preserved at the National Science Museum, Tokyo, matching the qualifying conditions in Article 75.3 of the Code. Collecting data are as follows: Hon-noo, Mobara City, Chiba Pref., Honshu, 3.XII.1997, K. Ishii leg. This specimen is recognisable as conspecific with the holotype of *Geophilus holstii* based on congruence in key diagnostic traits such as body size (in agreement with holotype), structure of mouthparts and forcipules (in agreement with Silvestri, 1919), elongation of the poison calyx (in agreement with Crabill, 1964) and number of coxal pores (in agreement with Pocock, 1895). Moreover, Hon-noo, Mobara City, which will become a new type locality for *Geophilus holstii* (Article 76.3 of the Code), is at a relatively small distance (about 150 km) from the original type locality in Ashinoyu (Article 75.3.6 of the Code—Qualifying conditions for neotypes). The specimen has

been labelled 'Proposed neotype of *Geophilus holstii* Pocock, 1895 by Marco Uliana, Lucio Bonato & Alessandro Minelli (BZN: Case 3408)' and has been described and illustrated in detail by Uliana et al. (2007).

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside the existing holotype of *Geophilus holstii* Pocock, 1895, and to designate as neotype the male specimen specified in para. 6 above;
- (2) to place on the Official List of Specific Names in Zoology the name *Geophilus holstii* Pocock, 1895, as published in the binomen *Geophilus holstii* and as defined by the neotype designated in (1) above.

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